

SHORT REPORT

HIV post-exposure prophylaxis among police and corrections officers

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Background	Police and correctional officers face the occupational hazard of blood and body fluid exposures, which carry the risk of infection with HIV.
Aims	To estimate the incidence rate (IR) of emergency department (ED) visits for blood or body fluid exposures sustained by police and corrections officers in an entire state and to quantify the utilization of HIV post-exposure prophylaxis (PEP) in response to these exposures.
Methods	A retrospective study of police and corrections officers presenting to EDs in Rhode Island between 1995 and 2001. The investigators estimated IRs of ED visits for these exposures with 95% confidence intervals and determined factors associated with HIV PEP using bivariate Pearson's χ^2 analyses.
Results	The average annual incidence of ED visits for blood or body fluid exposures over the study period was IR 4.41 (2.31–6.51) exposures per 1000 police and corrections personnel. Only 15% of officers sustained percutaneous injuries or blood-to-mucous membrane exposures. Sixteen officers were offered HIV PEP and 10 accepted it. Offering of HIV PEP was 3.3-fold greater for officers sustaining percutaneous and blood-to-mucous membrane exposures instead of other body fluid exposures.
Conclusion	The incidence of ED visits for blood or body fluid exposures by police and corrections officers was low and most exposures did not have the potential for HIV transmission. HIV PEP was infrequently used for these exposures.
Key words	Blood-borne pathogens; HIV; needlestick injuries; occupational exposure; police; post-exposure prophylaxis.

Introduction

Police and corrections officers, unlike health care workers, often operate in surroundings that lack measures for reducing blood and body fluid exposures. Evidence collection, suspect apprehension, inmate processing or searches carry the risk of physical violence which can entail exposures to blood and body fluids that can transmit HIV and other pathogens. In this study, the annual incidence of visits to Rhode Island emergency departments (EDs) for blood and body fluid exposures among police and corrections officers and the factors associated with

HIV post-exposure prophylaxis (PEP) utilization as a response to exposures were described. ED visits from 1 year prior to the release of Centers for Disease Control and Prevention (CDC) guidelines on occupational HIV PEP (1995) until the second revision of these guidelines (June 2001) were included in this study [1–3].

Methods

ED visits for blood or body fluid exposures to the 10 acute care general medical hospitals in Rhode Island from 1 January 1995 to 30 June 2001 were identified. The 10 hospitals comply with the 1996, 1998 and 2001 CDC occupational HIV PEP guidelines [1–3]. All hospital institutional review boards approved the study.

ED visits for blood or body fluid exposures were identified from hospital and ED provider billing databases using International Classification of Disease codes [4]. These codes were E920.5 (needlestick), V01.7 (exposure to other viral diseases), V01.8 (exposure to other communicable disease), V07.8 (other specific prophylactic measure), V07.9 (unspecified prophylactic measure) and V15.85 (exposure to potentially hazardous body fluids).

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Trained research assistants reviewed the ED medical records and extracted the age, gender and occupation of the patient; the hospital where the patient presented, the type and the time of exposure; the HIV status of source and whether or not HIV PEP was utilized. ED visits that did not involve a blood or body fluid exposure were not reviewed. ED visits by police and corrections officers were identified and included in this analysis. There are 42 municipal and 1 state police force and 1 correctional officer force in the state [5]. Of the police officers, 93% are male and of the correctional officers, 89% are male.

Annualized incidence rates (IRs) using the total number of police and corrections officers employed in Rhode Island in each year of the study were calculated. The number of police and corrections officers employed in the state was obtained from the Rhode Island State Police [5]. Because the study period covered only half of 2001, all data from that year was doubled before being included in the analysis. IRs and corresponding 95% confidence intervals were generated using a Poisson regression model. Bivariate analyses using Pearson's χ^2 were conducted to evaluate factors potentially associated with the offering and acceptance of HIV PEP when it was offered. Differences at the $\alpha = 0.05$ level were considered significant.

Results

Of the 105 police and corrections officers who visited Rhode Island EDs for blood or body fluid exposures from 1995 to mid-2001, the majority (92%) were men and had a median age of 31 years (range: 20–49 years). Most (86%) were exposed to an unknown HIV status source. Table 1 shows the IRs of ED visits for exposures among

police and corrections officers. The exposures included percutaneous injuries (10%), blood-to-mucous membrane splashes (6%), blood splashes to skin (59%), body fluid-to-mucous membrane splashes (14%) and body fluid splashes to skin (11%). Percutaneous and blood-to-mucous membrane contacts (significant exposures), which are of concern for hepatitis and HIV transmission, accounted for 15% of the exposures.

Table 2 describes the percentages of officers who were offered PEP, as well the percentages that accepted it when it was offered. Offering of HIV PEP was 3.3-fold greater for officers who sustained a significant than non-significant exposure. Acceptance of HIV PEP when it was offered was 2.5-fold greater for officers who were evaluated at a teaching instead of non-teaching hospital.

Discussion

These data show that there were approximately four ED visits for exposures to blood or body fluids per 1000 police and corrections officers between 1995 and 2001. In a 2000–03 study of the Amsterdam police force, Sonder *et al.* [6] found an IR of 6.8 blood or body fluid exposures per 1000 officers annually, only slightly higher than in this study. In this study, the IR for the more significant exposures was considerably lower than the 3.9 percutaneous exposures per 1000 officers per year found by Pagane *et al.* [7] among New York City police officers between 1992 and 1993. This difference might be because our data reflect ED visits for exposures across a whole state rather than for one large urban centre; the data of Pagane *et al.* comprise self-reported incidents of exposures for which these officers might not have sought medical

Table 1. Incidence of police and correctional officer ED visits following exposure

Year	Police and corrections ED visits, 1995-mid-2001	Total police and corrections personnel	Average yearly incidence of police and corrections officer ED visits, per 1000 police and correction personnel		
			All exposures	Percutaneous and blood-to-mucous membrane exposures	All other exposures
			IR (95% CI)	IR (95% CI)	IR (95% CI)
1995	5	3708	1.35 (0.17–2.53)	–	1.35 (0.17–2.53)
1996	18	3653	4.93 (2.65–7.20)	–	4.93 (2.65–7.20)
1997	14	3741	3.74 (1.78–5.70)	0.53 (0.00–1.28)	3.21 (1.39–5.02)
1998	18	3824	4.71 (2.53–6.88)	0.78 (0.00–1.67)	3.92 (1.94–5.91)
1999	21	3951	5.32 (3.04–7.59)	1.52 (0.30–2.73)	3.80 (1.88–5.72)
2000	26	4018	6.47 (3.98–8.96)	1.0 (0.02–1.97)	5.48 (3.19–7.76)
2001 ^a	6	3932	1.53 (0.30–2.75)	0.51 (0.00–1.2)	1.02 (0.02–2.01)
1995–2001	15	3832	3.91 (1.93–5.90)	0.52 (0.00–1.25)	3.39 (1.55–5.24)
1996–2001	17	3853	4.41 (2.31–6.51)	0.78 (0.00–1.66)	3.63 (1.73–5.54)

CI, confidence interval.

^aHalf year, original data doubled.

Table 2. Percentage of police and corrections officers offered and receiving PEP, by factor

	<i>n</i>	Offered HIV PEP (%)	Not offered HIV PEP (%)	<i>P</i> -value	<i>n</i>	Accepting PEP when offered (%)	Not accepting PEP when offered (%)	<i>P</i> -value
Age				<0.17				<0.55
≥30 years	62	19.4	80.7		12	58.3	41.7	
<30 years	42	9.5	90.5		4	75.0	25.0	
Gender				<0.81				<0.18
Male	96	15.6	84.4		15	66.7	33.3	
Female	8	12.5	87.5		1	0.0	100.0	
Type of hospital				<0.21				<0.02
Teaching	26	23.1	76.9		6	100.0	0.0	
Non-teaching	78	12.8	87.2		10	40.0	60.0	
HIV status of source				<0.14				<0.07
HIV infected	14	28.6	71.4		4	100.0	0.0	
Unknown	90	13.3	86.7		12	50.0	50.0	
Type of exposure ^a				<0.01				<0.18
Significant	16	37.5	62.5		6	83.3	16.7	
Non-significant	88	11.4	88.6		10	50.0	50.0	
Days elapsed since exposure ^b				<0.20				—
<3 days	91	15.4	84.6		14	71.4	28.6	
>3 days	9	0.0	100.0		0	—	—	
Year of exposure				<0.24				<0.21
1995	5	0.0	100.0		0	—	—	
1996	18	0.0	100.0		0	—	—	
1997	14	14.3	85.7		2	100.0	0.0	
1998	18	16.7	83.3		3	100.0	0.0	
1999	21	28.6	71.4		6	50.0	50.0	
2000	25	20.0	80.0		5	40.0	60.0	
2001	3	0.0	100.0		0	—	—	

Confirmed HIV negative sources (1 patient) not included in this analysis.

^aSignificant exposures were percutaneous and blood-to-mucous membrane exposures.

^bDays elapsed not available for all patients.

attention, or because of improvements in safety measures and universal precautions and the release and propagation of the CDC guidelines that occurred during the time that passed between the two studies [1–3].

It is reassuring to observe that a low percentage (15%) of officers sustained higher-risk exposures—exposures that should be considered for HIV PEP under the CDC guidelines [1–3]. Most of the officers presented within 24 h, which is within the window of greatest efficacy for HIV PEP. Unfortunately, most of the exposures were from sources of unknown HIV status, thus complicating the decisions about HIV PEP. The increasing availability of rapid HIV testing will expedite confirmation of source status, thus avoiding unnecessary HIV PEP prescription.

The overall low use of HIV PEP suggests that officers are unfamiliar with treatment options or that hospitals are unsure whether to evaluate them in the same way as for health care workers, for whom the evaluations are clearly defined by the CDC guidelines [1–3]. It was reassuring to find that sustaining a significant exposure was associated with being offered HIV PEP, but it is concerning that acceptance of HIV PEP was greater at teaching than non-teaching hospitals. Standardization of protocols for

Key points

- There are a relatively low number of significant blood and body fluid exposures sustained by police and corrections officers in this state.
- HIV PEP is offered more often for officers who have significant exposures and is accepted more often by officers who present to EDs at teaching hospitals.
- The CDC guidelines for occupational HIV PEP may not be having an adequate effect on the ED management of exposures sustained by police and corrections officers.

dealing with blood and body fluid exposures among police and corrections officers as well as increased education regarding these protocols for these personnel appear indicated.

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Conflicts of interest

None declared.

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